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**ABSTRACT****METHOD AND APPARATUS FOR LASER VIBROMETRY**

Apparatus and method for identifying a remote target (7; 7a) is described. The  
5 remote target (6; 6a) is illuminated with radiation (5; 5a) generated by a laser (1;  
1a) and the radiation scattered by the target (6; 6a) is modulated in phase by  
the surface (6; 6a) vibrations of the target (7; 7a). A portion of the scattered  
radiation is collected by multiple optical receivers (8, 9, 10; 8a, 9a, 10a) and  
demodulated by a phase demodulator to generate a signal proportional to the  
10 vibrational displacement of the remote target (7; 7a). The radiation scattered by  
the remote target (7; 7a) will also include laser 'speckle', generated when  
radiation is scattered by a rough solid surface. This speckle can generate  
errors in the signal demodulated, which can in turn cause identification errors.  
Apparatus is disclosed where the signals generated are substantially unaffected  
15 by laser speckle, improving the accuracy of remote target identification.

Fig. 1